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Burden Emphasizes Wisdom Of Federal Aid For Aviation

Wise federal investment in aviation is self-liquidating as is being proved continually, according to William A. M. Burden, Assistant Secretary of Commerce.

Outlining the economic benefits of a federal-aid airport program, Mr. Burden in an address at the New York Town Hall reminded his listeners that the Federal Government has in effect subsidized the growth of our airlines.

"From 1918 to 1942, the air mail service operated at a deficit, which," he declared, "at the end of the latter year totaled 200 millions of dollars. But with increased mail volume the system has become increasingly profitable, and is currently returning to the Post Office Department a profit of almost 100 million dollars a year. By the end of this fiscal year the entire deficit since 1918 will be wiped out."

Modern, economical safe airplanes are also essential to the growth of civil aviation, he said in his Town Hall address. If private flying is to provide useful transportation and not merely a form of sport, according to Mr. Burden, we will need better airplanes, an adequate system of airports and convenient service facilities.

"Generally speaking," he declared, "it is the responsibility of government to provide the airports, and of private enterprise to supply the servicing facilities."

"We all agree it is proper for government agencies to build streets and highways, and operate traffic lights, since these are public utilities."

Part Private Enterprise Plays—"Similarly it is a legitimate expenditure of public funds to finance the construction of airports and radio aids to air navigation, since these are the harbors and highways of the skies. But establishment of aircraft repair services, storage hangars, and the like, though essential to flying, are the province of the private capital."

The speaker briefly gave the history of government aid to airports saying, "Aid to airports on a large scale began around 1925, when many municipalities undertook airport construction to obtain commercial airline service, just then growing rapidly. Their construction was overdone because of the exaggerated expectations engendered by the aviation boom of the 20's, and we must be careful not to make the same mistake again. The Federal Government did not come on the airport scene until 1933, when a great

deal of airport construction was undertaken in connection with public works and work relief programs.

National Defense Program—"Late in 1940, Congress authorized an appropriation to the CAA for building airports certified by the War or Navy Departments as essential to national defense. In the four years since, approximately 400 million dollars has been appropriated to the CAA for defense airports."

"In the last 12 years slightly more than three-quarters of a billion dollars has been spent by the Federal Government on airports, mostly as an adjunct of relief or defense projects. Aviation, generally did benefit, of course, but in an unbalanced way. Big airports in the large cities were the chief product of the works program, since their construction provided the employment in the places where most of the jobless citizens lived. In the same way, the needs of our armed forces during the war have been confined almost entirely to large airports, which incidentally, were not always located in places near large population centers which might utilize them for air commerce after the war."

"When we survey the national airport system today, we find it is in pretty good shape as far as the big fields for major airline operations are concerned, but sadly lacking in a proper distribution of small airports, or airparks as we call them, for personal flying."

"As a matter of fact, there has been an actual decline in the number of small airports. Class 1 and 2 fields, the types suitable for personal flying and local commercial service, have dropped from 2100 in 1939 to 1800 in 1944. In contrast, while we had only 57 large transport type airports in 1939, there are now some 1150 airports in that category."

(See Burden, page 31)

Army Gives Wright Highest Civil Honor For Plane Building

Secretary of War, Stimson, awarded to T. P. Wright, Administrator of the Civil Aeronautics Administration, a "Commendation for Exceptional Civilian Service" for his part in the production of aircraft while he was Director of the Aircraft Resources Control Office in the War Production Board.

The citation, which is the highest that can be awarded to civilians by the War Department, reads:

Highest Civilian Army Honor—"In recognition of his outstanding contribution to the expansion of aircraft production by assisting in the equitable resolution of the many difficult and urgent problems of aircraft scheduling, standardization and allocation. His development of useful methods of measuring manpower utilization and production efficiency has been of material assistance to the successful prosecution of the war."

The medal was presented Mr. Wright by Major General Oliver P. Echols, Assistant Chief of Air Staff in charge of Materiel and Services Production, with whom Mr. Wright worked when the great surge of aircraft production in this country was getting under way.

Hark Back to Early Days—Both men reminisced in their remarks on the period when the industry of the country was being mobilized to meet the tremendous demands of the air forces for planes, which, at the time, were considered by many to be impossible of accomplishment.

Attending the ceremony in the Pentagon building were a score of Air Forces Officers to whose cooperation and assistance Mr. Wright ascribed the real success of the program which has elicited worldwide acclaim.

"I accept this award proudly, of course," the CAA Administrator said, "but I accept it in the name of all in this room who were working alongside General Echols and me in that battle for production."

Various Arrangements of Multiple-Engine Drives For Plane Propellers Outlined by CAA Engineers

Some day, our large airplanes may concentrate all their power in a single engine room, driving propellers at a distance. Anticipating a gradual approach to such a condition, Civil Aeronautics Administration engineers have outlined possible arrangements by which two engines may be used to drive one propeller in airplanes of the future.

Those possible arrangements are outlined in CAA Safety Regulation Release No. 169, titled "Unconventional Power Plant Arrangements for Multi-Engine Aircraft" and prepared by the Aircraft Engineering and Flight Engineering Division and the Factory Inspection Division of CAA.

Industry Interested—"Evidence of considerable interest" by the industry has prompted CAA to present that discussion of the arrangements of two engines, drive shafts, remote gear boxes and propellers, and to point out which are the equivalent—from the standpoint of multi-engine reliability—of multi-engine installations in which individual engine and propeller units are installed in separate nacelles.

"Since this subject has a very direct bearing upon the fundamental layout and the original conception of aircraft designs," the CAA outline states, "it is desired to take this opportunity to discuss various features of unconventional powerplant arrangements in order to point out those which are, and those which are not, considered acceptable."

The majority of combinations of engines, drives, gear boxes and propellers will be covered, it is felt, by the five arrangements which are described.

Material to Serve as Guide—"It is appreciated," the text of the CAA release on the subject continues, "that this brief discussion cannot hope to cover all cases of installations of this type which may be proposed in the future. Although it is hoped that the material presented herein will serve as a useful guide in the consideration of prospective designs, it is urged that manufacturers proposing to incorporate such unconventional powerplant installations in their aircraft contact the Civil Aeronautics Administration as early in the evolution of their designs as is practical in order that the suitability of a specific arrangement can be confirmed before a great deal of work and time is spent on the development of an installation that may later require extensive alteration."

The five arrangements are briefly outlined as follows:

Arrangements Outlined—1. Two separate engines with two separate drive shafts leading to a single propeller gear box. Within this gear box, each drive shaft is geared to a separate propeller shaft through gear trains which are mechanically independent, although contained in the same housing.

2. Two separate engines with two separate drive shafts leading to a single propeller gear box. Within this gear box, both drive shafts are geared to a common propeller shaft. Over-riding clutches or other devices are provided by means of which either engine and its drive shaft can be disconnected from the system.

3. Two separate engines with two short drive shafts leading to a single gear box located close to the engines. Within the gear box, both engines are geared to a common propeller drive shaft through over-riding clutches or some similar mechanism. The single propeller drive shaft extends to

a second propeller gear box or directly to the propeller.

4. Two engines which are separate, with the exception that they utilize a common reduction gear housing in which they are geared to a single propeller drive shaft through over-riding clutches or some similar mechanism. However, the reduction gear housing is common to both engines only in so far as it is bolted to both. It is otherwise separate as regards having its own lubrication system, etc.

5. Two engines which are separate except that they utilize a common crankcase. The engines utilize any of the previously mentioned combinations of drives.

Method Described—It is pointed out that all these arrangements incorporate parts whose "integrity" affects the delivery of the power of both engines. In addition, only the first arrangement outlined describes a method in which the actual power transmitting members for each engine-propeller combination are mechanically independent. That arrangement, therefore, will be considered the equivalent of a conventional twin-engine installation, provided the complete drive assembly satisfactorily undergoes an endurance test of 300 hours duration.

The condition of operation during that test should be the same as those specified for engine endurance tests in Part 13 of the Civil Air Regulations, except that the time of operation under each condition should be twice that which is specified for an engine endurance test.

The second, third and fourth arrangements described all incorporate power transmission parts which must carry the full power of both engines. To assure equal reliability to that of conventional twin-engine installations, these three arrangements will be considered equivalent, provided all parts transmitting the power of both engines (including the propeller) under an endurance test of 450 hours duration.

The conditions of operation during that test should be the same as those specified in Part 13, except that the time of operation under each condition would be three times that which is specified for an engine endurance test.

Fifth Arrangement Barred—The fifth arrangement outlined will not be considered, under any circumstances, as the equivalent of a conventional twin-engine installation. The reasons for this, of course, are fairly obvious. Among those reasons are the fact that internal failure of one engine might damage the second unit, loss of oil from a line serving one engine would probably deplete the oil supply for both engines, and isolation against fire hazards to both units would be almost impossible.

The usual flight tests, including those for the demonstration of one engine inoperative performance and handling qualities will, of course, be necessary. Neither these flight tests nor the endurance tests discussed above should disclose any possibility of losing the power of both engines simultaneously or any other undesirable characteristics.

(See Propellers, next page)

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Henry A. Wallace
Secretary of Commerce
Civil Aeronautics Administration
T. P. Wright, Administrator

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C INFORMATION
AND STATISTICS



Q—The December issue of the *CAA Journal* announced that 400 aircraft communicators' jobs, paying as high as \$2433 a year, are open to returned service men. Is information concerning these jobs available from the Civil Service Commission? J. G.

A—Yes. From the Washington Civil Service Commission office and the following regional offices: Atlanta, Ga., New Post Office Bldg.; Boston, Mass., Post Office and Courthouse Bldg.; Chicago, Ill., New Post Office Bldg.; Cincinnati, Ohio, Post Office and Courthouse Bldg.; Denver, Colo., New Customhouse; San Francisco, Calif., Federal Office Bldg.; New York City, Federal Building, Christopher st.; Philadelphia, Pa., Customhouse, Second and Chestnut sts.; Seattle, Wash., Post Office Bldg.; St. Louis, Mo., New Federal Bldg.; St. Paul, Minn., Post Office and Customhouse; and New Orleans, La., Customhouse.

Q—I would like to get copies of the weekly notices to airmen. How may I obtain them? A. E. M.

A—This is restricted matter, by direction of the War Department, and not available to the general public.

Q—How and where can I learn to fly a helicopter? B. B.

A—All current models of helicopters are either military, or still in the experimental stage. It would be impossible to get helicopter instruction except as a military pilot, or as a test pilot for a helicopter manufacturer. The CAA has given a few helicopter ratings, all to the types of pilots mentioned above.

Q—Has the polaroid system of green goggles and red plastic material in the wind shield been approved for blind flight instruction?

A—No. It has never been submitted to CAA for approval. It is, however, acceptable for instrument flight tests when approved by an inspector.

Q—Is it necessary to obtain a CAA certificate to operate a Link Trainer for the instruction of civilian students? C. G.

A—No. The CAA does not issue certificates for Link Trainer instructors.

(See Answers, page 32)

CIVIL AERONAUTICS JOURNAL

High School Pupils Get Flight Training; 600 In Wisconsin

Expanding nation-wide interest in flight training for high school students is revealed in reports received by the Aviation Education Service of the Civil Aeronautics Administration.

A review of the aviation education activities covering one-third of the high schools in Wisconsin by Walter B. Senty, State Superintendent of Secondary Schools, shows that on the basis of this partial study alone, more than 600 students obtained actual flight experience.

State Aids—A \$30,000 state appropriation to aid Wisconsin schools in introducing flight experience as laboratory work for science of aeronautics courses, and legislation enabling boards of education to contract with flight school operators for such instruction, are now pending. Senty has informed the CAA Aviation Education Service.

Similar measures have been introduced in Pennsylvania, where a committee on aviation education has prepared the first detailed "airport laboratory" plan. Written by Elizabeth Warnock, Pittsburgh teacher and holder of a commercial pilot certificate, this plan sets forth a program of ten lessons to be given at the local airport as a supplement to the high school classroom instruction. The lessons include flight experience, slanted to teach principles of aeronautics rather than piloting skill, and familiarization with airport practices, airplane maintenance problems and weather factors.

In Tennessee, the State Bureau of Aeronautics is cooperating with several colleges and universities in an extensive program for the training of aeronautics teachers, and Dr. C. H. Gilmore has become the educational advisor for all phases of aviation education.

New York Schools Participate—New York State has a \$20,000 flight experience program in operation, in which Schenectady, Rochester, Waterloo and other schools have already participated.

The Connecticut State Department of Education has just issued a bulletin titled "Educational Implications of the Air Age" which is considered notable for its specific suggestions of aviation materials which can be worked into other high school studies, such as social science, English, fine arts, mathematics, biology, etc.

Another important report on aviation education has been issued by the California State Department of Education, which counted 194 high schools with 4,661 students.

(See *Schools*, page 36)

Airline Business Increases

The Civil Aeronautics Board announces mail pound-miles flown by the 18 domestic airlines in December increased 31.64 percent and express pound-miles increased 19.29 percent, over the corresponding month in 1943 and that revenue miles increased 50.05 percent. The number of revenue passenger-miles increased 51.64 percent compared with December a year ago.

The average airplane load on the commercial airlines during December was 16.06 passengers, 710.9 pounds of mail, and 244.9 pounds of express, as compared with 15.92 passengers, 810.3 pounds of mail, and 308.1 pounds of express a year ago.

Future of Air Transportation Discussed Before Atlanta Freight Bureau Meeting

Air transportation from its beginning in the Post Office Department was discussed by Harllee Branch, member of the Civil Aeronautics Board, before the Atlantic Freight Bureau at its meeting in Atlanta, Ga.

Tracing the development of the industry Mr. Branch said: "Our air transportation services were instituted and for many years nurtured by the Post Office Department. During the pioneering years Government aid through mail payments kept the airlines in business. For several years, as Assistant Postmaster General, I was privileged to have a part in the Post Office Department's sponsorship of the airlines."

Growth of Industry—Referring to development, Mr. Branch said, "One of the most satisfying accomplishments of the air transport industry has been its progress toward financial self-sufficiency. In 1938 the domestic carriers derived about 37 percent of their revenue from mail payments. For the year ending June 30, 1944, only 21 percent of their revenues came from mail payments," he pointed out. "In 1938 the international carriers received about 52 percent of their revenues from mail payments, but for the year ending June 30, 1944, only 21 percent of revenues came from mail payments, and about half of this amount was payment for the carriage of foreign mails."

"Despite the fact that in May of 1942 our domestic carriers transferred 158 of their 324 transport plans to the armed services and a much curtailed war service pattern was introduced, the carriers, domestic and international, have handled increasing volumes of traffic. This has been achieved by greater utilization of planes and by the carriage of capacity loads. Whereas in 1938 aircraft was utilized about six hours per day and operated generally with a fifty percent load factor, today aircraft is utilized twelve hours a day and operates with an almost one hundred percent load factor."

Vast Expansion Expected—"Our international air transportation services will be greatly expanded after the war. Last June the Civil Aeronautics Board listed the international air routes which, in its opinion, should be served by United States flag air carriers in the early postwar period. The routes listed reach every continent and every important world trade area. Approximately 100 applications for certificates of public convenience and necessity covering these and other proposed international routes are now before the Board."

"The most serious obstacle limiting performance of the airlines in the cargo field has been, and still is, the relatively high cost of air transportation. From 1938 through 1942 the industry average for operating expenses ranged from 63 to 73 cents per plane mile. Other factors which have tended to retard the development of air cargo are the general excellence of surface transportation, the lack of low cost cargo planes, the attractions of the passenger market for the airlines, and the failure of the airlines to vigorously solicit air cargo. An optimistic view of the potential air cargo traffic is leading to a very active interest in the development of suitable cargo aircraft."

Gliders Considered—"There is much speculation as to the type of equipment which will be used for the smaller less concentrated cargo movements. It may be that the answer lies in the wartime perfection of

gliders and glider operating techniques, which are said to hold possibilities for low-cost air transportation. We are told that after the war we may expect production of gliders capable of carrying a pay load of 10,000 pounds, and that tug planes will be built specifically for glider operations.

"Under the American system of private enterprise our air transportation industry has led the world. The stimulus for our outstanding air transportation services in the United States has been provided under a policy of regulated competition. Under the same system of private enterprise and of regulated competition we can, with confidence, look forward to maintaining our position of world leadership."

Propellers

(Continued from preceding page)

In addition to the tests already briefly mentioned, investigations of vibration and critical shaft speeds and the like will generally also be necessary depending upon the details of specific designs.

If it is proposed to use any of the first four arrangements outlined, the two engines should be completely isolated from one another. They should be so arranged that the failure of any one component of a system (i.e. fuel system, oil system, control system, etc.) which serves either engine will not jeopardize the continued operation of the remaining engine. This, of course, involves the use of firewalls for isolation, separate fuel, oil, control systems and the like. If only one propeller is used it is also obvious that its governor should be driven from the propeller shaft to assure continued operation in case of the failure of one engine and the disconnection of that engine from the drive system.

It is also desired to sound a note of caution with regard to the use of simple over-riding clutches such as might be proposed for use in arrangements 2, 3 and 4 described above. The use of such clutches eliminates the flywheel effect of the propeller and may lead to difficulties in starting and a tendency for the engine to stop during idling operation, particularly in gliding flight. Provision should also be made to prevent propellers from over-speeding in power off glides. In general it will probably be found necessary to incorporate a means for eliminating the over-riding feature under some conditions at the will of the pilot.

It should be understood that the classification of any of these arrangements as equivalent to conventional twin-engine installations implies that equivalent safety will exist at all times. Should a failure subsequently occur in service that would cause the simultaneous loss of the power of both engines, it would obviously necessitate reclassification of the particular design involved as a single-engine installation. This single-engine classification would remain in effect until suitable design revisions were accomplished to preclude the possibility of further failures of a similar nature.

Airplane Seen More Potent In Peacetime Than As War Agent

Air transportation in the postwar period, aided by a new spirit of air-mindedness, technical advances and new sources of trained personnel, will become such a potent factor in worldwide trade and international understanding that it will far outweigh aviation's potentialities for destruction.

This was the opinion expressed by Oswald Ryan, member of the Civil Aeronautics Board, in a recent address before the Chamber of Commerce of Cincinnati, Ohio, in which he sketched present and future opportunities and obstacles confronting commercial aviation.

Into Third Dimension—"Aviation has added a new dimension to our life and thinking," said Mr. Ryan. "Up to the present hour we have been living on the surface of the earth and our lives have been moulded by the conditions of a two-dimensional world.

"In the future," he continued, "we shall be living at the bottom of a great ocean of navigable air. With the aid of that new navigable medium and the aircraft which traverse it, there will not be an important city on this earth more than 60 hours from any other city in the world. No two important cities anywhere will be farther apart by air than New York and Los Angeles now are by train. The age of isolation, with its barriers of geography and distance, is gone forever. It has been banished by an American invention, man's last and greatest conquest of time and space."

Postwar Prospects Tremendous—"In appraising the prospects of postwar air transportation," Mr. Ryan observed, "we must bear in mind that up to the present the industry has done little more than scratch the surface of the nation's travel market. At the outbreak of the present war, less than one per cent of those who traveled in the United States went by air. The potential market for air transportation in the postwar period can rightly be considered to be tremendous.

"Whatever the traffic diversion may be from older forms of transportation, that diversion, in my opinion, will be small in comparison with the entirely new traffic which can be generated by air transportation. We must not forget that in the past every new form of transportation created a large part of its own traffic—traffic that never existed before. I firmly believe that the development of more economical aircraft and methods of operation will revolutionize the travel habits of our people.

"When the time comes, there is good reason to believe that air passenger rates will drop from the present rate of four cents a mile, to continue a downward trend to perhaps two and a half cents."

New Stimuli to Aviation—Citing the need for immediate planning for postwar aviation, Mr. Ryan pointed to several factors which would influence postwar air transportation.

"In the first place," he declared, "there will be millions of Americans who will have become educated to the unique advantages of air transportation. The war is opening up

Recent CAA and CAB Addresses

Copies of addresses made by the Civil Aeronautics Administration and the Civil Aeronautics Board are obtainable from the CAA Information and Statistic Service and the CAB Public Information Section, both in the Department of Commerce Building, Washington, 25, D. C.

CAA Releases

William A. M. Burden, Assistant Secretary of Commerce, before Town Hall, New York City. Mr. Burden also addressed the National Crushed Stone Association, outlining the scope of the CAA National Airport Plan.

CAB Releases

Oswald Ryan, member Civil Aeronautics Board, Opportunities and Obstacles Confronting Air Transportation, before Cincinnati, Ohio, Chamber of Commerce.

L. Welch Pogue, Chairman Civil Aeronautics Board, International Aviation's New Charter, before Council of World Affairs, Kansas City, Mo.

Harlee Branch, member Civil Aeronautics Board, Air Transportation Enters Area of Its Greatest Development, before meeting of Atlantic Freight Bureau, Atlanta, Ga.

the air to the man in the street. For the first time, the power and significance of air transportation is apparent.

"Again, the war has provided a stimulus to aeronautical research and to the technical development of the art of flight which has packed into a brief decade a technical advance which would have required decades of peace to accomplish.

"There will also be available to our air transportation millions of war-trained aviation personnel. I am thinking of the pilots, mechanics, navigators, meteorologists and other ground personnel who will be knocking at the door of civil aviation when they return to their homes."

State Legislation Decried—At the same time, Mr. Ryan sounded a warning against the wasteful duplication and many hindrances to air transportation inherent in proposals for multiple state regulation and taxation of civil air operations.

"Strangely enough," he commented, "at about the same time that the leaders of fifty-four nations were considering, in an international conference in Chicago, measures for the removal of national barriers to civil aviation, proposals were being made elsewhere in the United States which, if adopted, promise to rear forty-eight state barriers to the progress of air transportation within our own country."

Correction

The statement in the Journal of January, 1945 that Gillespie Airport at Nashville, Tenn., had been bought by Fiske University and the Agriculture and Technical State College was in error. The field still is owned and operated by Gillespie Airways, according to a letter from J. D. Gillespie, president.

CAA Traffic Centers Established To Aid Fliers On "Tokio Run"

Traffic control centers to aid fighters and bombers on the "Tokio Run" are being established by the Civil Aeronautics Administration on four islands in the Marshalls and Mariannas.

The control centers will be staffed by CAA personnel under Army direction. In asking for the CAA's cooperation, the Army wrote—"The CAA has contributed in a large measure toward establishment of air traffic control procedures currently employed between the mainland and Honolulu, and it is the desire of this headquarters to continue these joint operations in our plans for expansion."

Serve Both Army and Navy—At Johnston Island, Kwajalein, Guam and one other point yet to be named, civilian air traffic controllers, men who have gained their experience in operating the 37,000 miles of airways here at home, will serve under the Oceanic Air Traffic Control (OATC), which serves both the Army and Navy and the stations were to be activated during February.

The CAA, out of its experience in controlling air movements, will provide the personnel and coordinate the work with the OATC office through the CAA's new Ninth Regional Office at Honolulu. The OATC will establish standards of operation, and determine policies.

Thus in four more spots on the war airways will civilians be using the know-how they have developed in the years since 1926 when the Federal Government first began construction and operation of airways. Already in this war, CAA engineers and maintenance men have supervised construction of signals and communications stations at 204 places outside the U. S. to guide U. S. airmen about the globe in their fighting and freighting. Even inanimate radio equipment, including radio ranges rooted from American soil, has gone overseas to fight. Fifty of these ranges are guiding airmen in places as remote as Ascension Island, Brisbane, Canton Island, Accra on the Gold Coast of Africa and Northeast India.

On Far Flung Fronts—Today, when most of the airways are built and operating,

(See *Traffic*, page 36)

CAA Radio Stations Prove Help to Seamen

Civil Aeronautics Administration radio range stations are proving of assistance to seamen as well as to navigators of the air. Many requests have been received from ships masters and pilots for lists of the stations with their locations.

One captain, requesting a copy of Air Navigation Aids which contains the desired information, wrote: "These radio range stations are very helpful in determining positions in foggy and uncertain weather."

Copies of the booklet are available at the CAA Division of Information and Statistics Service, Washington, 25, D. C., to persons who have need for them in their work or business.

Lessons Accidents Teach

Analyze your personal flying habits to discover and then to correct your weakness in traffic flying technique, is the recommendation to all pilots in a recent CAB Safety Bulletin.

Of the 62 airplanes involved in mid-air collisions in 1943, the report shows that 28 were totally washed out, 28 required major repair and only six escaped damage. More important, however, is the fact that out of the 89 occupants of these planes, 31 lives were lost and 9 persons were seriously injured.

Safety Bureau investigation reveals that these collisions happened in 13 different ways and "pilot error" and not the number "13" was responsible for all of them. With the thought of helping pilots to avoid such a fate and also to assist them in correcting bad flying habits they might have, ten rules are suggested. They are:

1. Avoid prolonged periods of attention to ground reference points; clear a broad area in all directions when doing low-sequence maneuvers.
2. Regard the assigned practice area as an area of limited traffic but not as an area of security from traffic hazards.
3. Make your turns smooth and gradual when flying in traffic.
4. Know the areas in which airport traffic may be expected; be alert to the possibility of a right-hand traffic pattern; maintain proper spacing when entering traffic patterns.
5. Practice precision maneuvers through forms of flying of a less hazardous nature than that of dog fighting.
6. Keep a pair of sun glasses handy. Turn the long way around, whenever possible, to avoid flying directly into the sun.
7. Do exhibition flying only in aircraft with whose characteristics you are familiar.
8. Do the coordination exercise of rolling on a point, holding the nose constantly on a point while banking from side to side, or a 90° turn in each direction, in order to clear the blind areas under the nose and above and below the wings.
9. Follow the standard pattern approach, allowing a full 1,000-foot final straight approach. Use clearing turns, or go around, when in doubt.
10. Follow the Civil Air Regulations religiously except when emergency demands a deviation.

Copies of this bulletin may be obtained from the CAB Public Information Section, Room 5040, Commerce Building, Washington 25, D. C. It is entitled "Why Do Pilots Have Mid-Air Collisions and How Can They Be Avoided?"

Skylarking Pilots Lose Certificates for 6 Months

An aerial frolic near Grosse Pointe, Mich. cost Jesse M. Jenkins and Harvey J. Kleinlein their pilot certificates for six months according to findings of the Civil Aeronautics Board.

Jenkins, a student pilot and Kleinlein, a commercial flier, performed stunts over the Detroit suburb too low, flew within less than 500 feet of each other and performed acrobatics. In addition neither flier was equipped with parachute.

MARCH 15, 1945

Achievements Of World Aviation Conference Are Analyzed By CAB Chairman L. W. Pogue

Opening the skies to international aviation is seen by L. Welch Pogue, Chairman of the Civil Aeronautics Board, as one of the achievements of the International Civil Aviation Conference. He pointed this out in an address before the Council of World Affairs in Kansas City, Mo.

Political Outlook Expanding—Speaking of the Conference he said: "The evidence was clear that our political thinking was expanding with a shrinking world. As men gain perspective by the passage of time they will be increasingly impressed by the magnificent achievements of the Conference."

Three of the most vital of those achievements were described by Mr. Pogue as being "all in the realm of international cooperation." He outlined them as follows:

"First: the creation of a world-wide aviation organization having broad and important functions in both safety and economic matters. Second: the opening of the ocean of air for transit purposes and of airports for refueling and other nontraffic purposes to peaceful navigation by international air lines. Third: the offering to the world of the principle of freedom to establish international air lines between contracting states without special agreements much as ships are free to sail the seas."

Means Closer National Unity—Mr. Pogue sees international aviation as a means of bringing nations into closer accord and establishing neighborly relationship. He said: "The creation of a world aviation organization is a milestone of progress in the cause of aviation and of international cooperation. Its only predecessor (established under the Paris Convention of 1919) did not have adequate functions or world coverage to meet future needs. The new international civil aviation organization has been vitally needed; and its structure and functions give it a scope equal to the task before it. Of course, the performance of the organization is still to be tested, but the start of its existence is bright with promise."

Needs Public Approval—Success of an

Long Life Claimed For Corundite Plug

A recent article published by the Society of British Aircraft Constructors, Ltd., presents an impressive record of reliability of the K.L.G. Corundite type spark plug when used in both air cooled and liquid cooled engines during war-time operations.

It is claimed that this type spark plug has a service life from four to five times longer than the ordinary aircraft engine spark plug and that since 1943 virtually every U. S. Flying Fortress has taken off from British bases with this spark plug installed in each of its engines.

Credit for the achievement of this record is attributed to certain technological advances in the design and construction which the article describes as follows: The use of a fused alumina ceramic insulator in place of mica. The incorporation of a resistor within the plug to counteract erosion of the plug points. The installation of a fine-wire platinum point device which is of no greater thickness than one three hundredth of an inch.

international aviation program rests on public approval. Mr. Pogue pointed out realization of hopes voiced at the Conference by saying: "The three great achievements for aviation of the Conference require the support of our public opinion. The World Organization, the Transit Agreement and the Air Transport Agreement are three chapters in International Aviation's New Charter for this great boon to mankind. I urge you to support them."

"America was opened up by men seeking freedom and an open opportunity in a fair field. We are the sons and daughters of those men. As we open up the air, let us emulate their illustrious example."

CAA Demonstrates Value Of Plane to Businessmen

How appreciable savings in time and money can be achieved through travel in privately operated aircraft has been demonstrated by the Civil Aeronautics Administration in connection with its contract termination program. On that assignment, more than \$4,500 in fares, subsistence and salary time was saved by use of a Government-owned airplane.

The value of an aircraft to business executives was further demonstrated by the 83 percent time saving—actual travel time was less than 103 hours by air against more than 609 that would have been required by rail.

The trip was made by a CAA Contract Termination Board of four members, one of whom served as pilot. They made 63 stops in 108 days. Best possible time by rail would have been 146 days, assuming trains would be scheduled exactly as needed.

Time saved by the Board was probably greater than would be the case in many business trips, however, because much of its business was conducted at airports. It was also true that the trip was made during favorable flying weather—only twice in 108 days was the plane grounded because of weather.

The cost of operating the plane, including depreciation, was \$886.47 less than train fares would have been. The time saving of 152 man days represented \$3,626.72 in cash, on the basis of \$17.86 average daily salary plus \$6.00 per diem subsistence allowance.

The time savings were especially notable when the destinations were not regular railroad stops, or when natural barriers such as mountains made surface transportation roundabout. For example, the Board made a trip from Prineville, Oregon, to Reno, Nevada, in 2½ hours. By rail, it would have taken about 58 hours.

Stage Lines Asks Air Certificate

Virginia Stage Lines has made application to the Civil Aeronautics Board for a certificate to establish service by conventional aircraft and helicopters between Washington and Asheville, N. C., and Winston-Salem and between Norfolk and Staunton, Va.

3 Die in Lake Plunge—A seaplane operated by Shagawa Airways, Inc., Ely, Minn., in non-chartered service, dived into the water soon after taking off at Crooked Lake, Minn., causing the death of three passengers by injuries or drowning. The pilot, Clinton R. Schmidt, 28, of Ely, escaped by tearing a hole in the fabric at the rear of the fuselage. His injuries were slight.

The passengers were J. F. Powell, 53, and his son Daniel, 17, both of Kansas City, Mo., and A. B. Allen, 52, of Minneapolis.

Schmidt holds a commercial pilot certificate with single-engine land and sea and flight instructor ratings. He had accumulated about 2,296 flying hours. His seaplane time totaled 115 hours acquired in the 90 days preceding the accident.

The wreckage was found in a nose-down position near the center of a sheltered bay. Examination of the propeller indicated little or no power was being developed at the time of the accident. All seat belts were found unbuckled, and apparently had not been used. Both cabin doors were latched, but opened freely. The left doorway, however, was found to be obstructed by a canoe paddle placed across it inside the cabin. The pontoon bottoms had been repaired with metal patches, riveted on, which would have tended to retard the take-off slightly. Examination of the engine, after it had been disassembled, disclosed no apparent mechanical cause of stoppage.

11 Killed in Crash—An accident involving an aircraft of U. S. registry, which was being operated by American Airlines, Inc., occurred near Centerville, Tenn., about 42 miles southwest of Berry Field. The flight was identified by the air carrier as Flight 56 and was operated in scheduled service between Cleveland, Ohio, and Memphis, Tenn. The three members of the crew one airline captain, a non-revenue passenger; and six revenue passengers were fatally injured.

The aircraft fell on a thickly wooded slope of a hill which rose to the height of about 75 feet. Examination indicated the aircraft had struck the ground nose first in a vertical position.

All parts of the airframe, instruments, engines and accessories were accounted for, and although severely damaged no evidence was found to establish failure of any part of the aircraft prior to impact.

The probable cause of the accident was inability of the aircraft to gain or maintain altitude due to carburetor ice or propeller ice or some combination of these conditions while over terrain in weather unsuitable for an emergency landing. Weather conditions, which had their nature been anticipated, should have precluded the dispatch of the flight in an aircraft not equipped with wing or propeller deicing equipment.

Airliner Crashes—Pilot Ralph Leo Burton, 34, of Cheyenne, Wyo., was fatally injured when the aircraft on Flight 3 of Inland Air Lines struck the ground under conditions of low visibility near Ottumwa, S. D. No passengers were aboard.

Burton held a commercial certificate with single-engine land and flight instructor ratings. He had accumulated 5,251 hours of flying time, including 569 in the type of plane involved. It was seven years old and had been operated 2,733 hours, including five since the last major overhaul of plane and engine.

The aircraft struck the ground with power applied and the landing gear retracted. Parts of the plane were scattered over a considerable area and the body of the pilot lay about 125 feet from the main part of the wreckage. It could not be determined whether there had an explosion.

Possibility that the pilot had been overcome by carbon monoxide was considered because of a crack in the engine exhaust ring. Investigation revealed there was no monoxide leakage into the cabin.

The probable cause of the accident was action of the pilot in continuing contact flight under conditions which prevented his recognizing the proximity of the ground.

Pilot and Passenger Injured—Engine stoppage immediately following take-off from Howell Airport, Paducah, Ky., resulted in a crash seriously injuring the pilot, Howard Talmadge Sheffey, 41, of Paducah, and Ray Driskill of Fulton, Ky. Another passenger, Polk Brooks of Paducah, received minor injuries.

Examination of the wreckage revealed no indication of mechanical failure of any part of the aircraft prior to impact. The fuel selector valve was "on," both tanks. The right tank contained about 5 gallons of gasoline, the left was almost empty. In this aircraft the selector valve is fitted into a "T" which connects tanks and the carburetor. With both tanks turned on, it is possible for fuel to cross-feed from one wing tank to the other. If the fuel is low, its flow to the carburetor could be restricted about the time the plane becomes airborne.

As a result of this condition the manufacturer of the subject type aircraft issued a service bulletin, which stated in part: "Do not climb or maneuver this airplane with low fuel in tanks. When taking off or maneuvering with low fuel in one tank, and with sufficient fuel in the other tank, it is recommended that the fuel valve at the low tank be turned to the 'off' position. . . . To insure operation on one tank only, the Fuel Selector Valve Cover Plate should be stenciled to show, 'Caution, operate on one tank only.'" The selector valve on the subject aircraft had not been so placarded. The pilot, who apparently was not familiar with the aircraft, followed the customary procedure for most aircraft and took off with both tanks on.

Mid-air Crash—Pilot Wilbert K. Smith was fatally injured and his passenger, Walter W. Peterson, sustained serious injuries when the plane in which they were making a landing approach to Christenson Airport, Blair, Neb., was hit by the propeller of an overtaking plane, piloted by Walter G. Fitch who escaped injury.

Smith, 36, held a private pilot certificate with single-engine land rating, and had accumulated about 72 hours of flying time, 65 of which were in the type of plane involved in the accident. Peterson, 42, held a student certificate as did Fitch, 38, who had flown 16 hours solo. Blair is the home of all three men.

According to the airport manager, Fitch had been warned previously about his tendency toward reckless flying and had been cautioned to observe air traffic rules.

The probable cause of this accident was the unorthodox manner in which Pilot Fitch approached the airport and his utter lack of vigilance in overtaking a landing aircraft.

Brothers Killed—While practicing simulated landings during a cross-country flight George W. Edner of Washington, D. C., and his brother, Charles, were fatally injured in an accident near Walkerton, Ind.

George Edner, 26, held a private pilot certificate with single-engine land rating and had logged 39 solo hours, 19 of which were in the plane involved.

Dual controls were installed and operative in the plane at the time of the accident. Other pertinent facts were: the airplane was operating with an approximate overload of 36 pounds; evidence the two occupants changed position during the trip and the previous statement that they intended to practice landings on the trip. It is not known which of the occupants of the plane was at the controls at the time of the accident, nor is it possible to determine the factors which brought about the stall of the plane.

Student Pilot Injured—Francis L. Clayton, 26, a student pilot whose home is at Devalls Bluff, Ark., was seriously injured when the plane he was driving fell out of control in an open field near Hazen, Ark. Clayton had logged 11 hours of solo flying time.

According to the pilot the "engine coughed twice" on take-off and during a turn to get into position for landing. The manner in which the propeller was broken indicated considerable power was being developed at the time of the impact. The records and appearance of the airplane and engine indicate they had received satisfactory maintenance, and were in good condition prior to the accident. Clayton said he realized he should not have landed in an undesignated area.

Lands in Cemetery—Clarence Louis Gantzer, instructor, and his student, Frank John Sarek, both of St. Paul, Minn., were seriously injured when the aircraft in which they were practicing simulated forced landings crashed in a cemetery near Robbinsdale, Minn.

Gantzer, 41, held a commercial pilot certificate with single-engine and flight instructor ratings. He had flown about 1823 hours, 40 in the type of plane involved. Sarek, 37, held a student pilot certificate and had logged about 60 hours solo time, 10 of which were in the type of plane involved.

The probable cause of the accident was the instructor's poor judgment in allowing the simulated landing to progress to a point where recovery could not be effected.

Hits High Tension Wires—In an effort to avoid high tension wires after take-off from an airport near Garrison, N. D., Ralph M. Christensen, 32, of Watford City, N. D., crashed the plane, resulting in serious injuries to himself and his passenger, Donald L. Erickson, 32, of Watford City.

Christensen held a student pilot certificate and had logged 92 hours of solo flying time, all in the type of plane involved. Erickson held a student pilot certificate and had logged 15 solo hours.

The probable cause of this accident was a stall out of a turn at an altitude too low to effect a recovery. A contributing factor was the pilot's take-off toward high obstructions under calm air conditions.

(See Accidents, page 32)

Burden

(Continued from page 25)

What Is a "Small" Airport?—Just what does the CAA have in mind when it speaks of a small airport? A Class 1 airport, costing about \$150,000, is designed for personal flying with light aircraft. It probably will have two landing strips, approximately at right angles, and 1800 to 2700 feet in length. These strips will generally be of turf. In some cases, there may be an all-way landing area. Such fields may, and we hope will, be developed as 'airparks'. They will be treated not merely as landing places, but as integrated recreation areas. In addition to the landing strips, hangars and shops, picture a swimming pool, tennis courts, outdoor dining, and other features that will make the small airport an attractive community center.

"The development of ground facilities for private flying gives the city planner a unique opportunity of putting into effect a number of other civic improvements which could never be achieved except as part of a commercial development. To quote the well-known authority Dr. Michael Rosenauer—"The angular spaces between the runways of an airport offer sufficient land, not only for all the service required for the operation of the airport, but also for purposes connected with the community life of the surrounding city. The tendency of modern planning to organize neighborhoods as such, leads to a grouping of community facilities. Local services such as police stations, fire houses, welfare and health centers can be centralized with a saving in both building and administration costs. In many cases, the location appropriate for the airport would be a desirable location for these services. Educational buildings and libraries, for example, could hardly be better located than around open grounds, and the runway lay-out for private flying airports facilitates the architectural grouping of these buildings with gardens, ground and play areas. The fact that obstructions must be kept low only at the end of the runways themselves and not necessarily in the angular areas between them is important in respect to land values, as it will make possible the construction of multi-storied apartment buildings so near the airport as to make them attractive to plane owners. Commercial activity will be attracted in the form of repair shops, etc.; and neighborhood shopping centers may be provided in connection with the car-parking area on the fringes of the airpark. In fact, the life of the entire neighborhood will tend to center around the open ground of the airport, a tendency which all city planners are most anxious to encourage."

Less Noise More Friends—Mr. Burden said that, before such a development will be welcomed, the aircraft industry must take steps to reduce the noise nuisance now associated with its product. "Technical experts," he continued, "advise me it is quite possible to reduce substantially the noise of a light plane engine without impairing its efficiency. When this is achieved, I feel that airparks will enhance, rather than threaten, real estate values. Hundreds of thousands of private fliers will want to live within easy reach of such airparks."

Will Create 125,000 Permanent Jobs—Viewing the CAA National Airport Plan from the angle of employment, the Assistant Secretary said: "Everyone of us is concerned about providing jobs for all who

CAA Men Go to London For Aviation Meeting

Three Civil Aeronautics Administration officials are in London to discuss technical problems of international civil aviation.

Eugene Sibley, Chief of the CAA Communications Division will go to Paris April 9 for the meeting of the International Commission for Air Navigation. Charles F. Dycer, Chief of the CAA Flight Engineering Division, and Paul Spiess of the CAA Aircraft Engineering Division, are in London, where they will confer with British technicians on airworthiness requirements for aircraft used in international operations. This was one of the most complicated subjects studied at the International Civil Aviation Conference held in Chicago last November, and it is expected that the 99-page tentative agreement reached there will be taken up at the London meeting.

Dycer and Spiess will go on to Paris for the ICAN sessions on airworthiness following completion of the London conference.

Established in 1919 as an outgrowth of the Versailles Peace Conference, ICAN, it is understood, plans to bring its now outmoded technical documents substantially into conformity with the equivalent documents of the body formed in Chicago, prior to a merger of the two organizations.

Sibley, Dycer and Spiess all participated in the Chicago Conference. Mr. Sibley has represented the United States at many international meetings, including the International Meteorological Organization at Berlin in 1939 and Transatlantic Air Service Safety Organization at Ottawa in 1942. He also has been on special missions to Portugal and Bermuda to arrange for aeronautical communications with WSY, the intercontinental station operated by CAA at New York. Mr. Spiess was a member of a group who visited England in 1943 to exchange information with British technicians on wood aircraft construction.

want them in a peacetime economy. Aside from the fact that the CAA airport construction program itself would provide 1,250,000 man-months of temporary direct employment, and that 75% of the expenditure would eventually find its way into wages. More important, we estimate that the system of 6300 airports would, when completed, provide for about 125,000 continuous jobs. This is based on 10 to 100 jobs at each airport, depending on the size of the community it serves, and the type of flying conducted.

"I believe that this nation will have 400,000 civil aircraft in the next ten years, as compared with less than 25,000 today, but only if, first, we provide enough landing fields in the right places, and second, the manufacturers offer planes that combine utility, safety, easy handling, and economy of operation.

"Everything I have said is intended to apply to all of us here. The air age of the next decade is not for our children alone. In upstate New York there is an 83-year-old man who is an active pilot. He didn't begin to fly until he was 79. Almost anyone can pass the physical examination and almost anyone can learn to pilot a light plane. So I hope that you will take an interest in airports not merely as an alert citizen, but as an active user."

Group To Aid CAA On Private Flying Named By Wright

A second step in the Civil Aeronautics Administration's plan to assist non-scheduled and private flying was taken in the recent appointment of a special advisory committee to speak for the aviation industry and private fliers.

The committee personnel was announced by Administrator T. P. Wright and is a second development in the program which started with the naming of John H. Geisse as Assistant to the Administrator for Personal Flying Development.

Industry Selects Members—The committee personnel was nominated by the industry at the request of the Administrator at about the time he appointed Mr. Geisse his assistant.

Meetings of the body will be held at least once each quarter and it will advise with the Administrator on matters pertaining to the whole field of flying except that of scheduled air transportation. All members of the committee are active in non-scheduled aviation activities, and each has had extensive experience in flying.

Industry's Spokesmen—Representing the industry are: W. T. Piper, President, Piper Aircraft Corporation, Lock Haven, Pennsylvania, Representative of the manufacturers of aircraft of types engaged in non-scheduled flying operations; John Groves, Air Transport Association of America, Washington, D. C., Representative of the Airlines; Arthur I. Boreman, Publisher, *The Dry Goods Journal*, Des Moines, Iowa, Representative of the Users of non-scheduled flying type aircraft; Beverly Howard, President, Hawthorne School of Aeronautics, Hawthorne Field, Orangeburg, South Carolina, Representative of the Fixed Base Operators; Joseph Bergin, Director Utah State Aeronautics Commission, Salt Lake City, Utah, Representative of the State Aviation Organizations.

Regions Represented—Those who will represent the private fliers in the CAA Regions are:

Fred Weick, Engineering & Research Corporation, Riverdale, Md., Region I; Harry Playford, St. Petersburg, Fla., Region II; William A. Mara, Vice President, Bendix Aviation Corporation, Detroit, Mich., Region III; Edward Garbacz, Central Flying Service, Little Rock, Ark., Region IV; James C. Johnson, Springfield Flying Service, Springfield, Mo., Region V; Douglas Robinson, Air-Safe Company, Tucson, Ariz., Region VI; Ed. Williamson, Bearing Service Company, Seattle, Wash., Region VII.

Some 125 nominations for the 12 places were received. Selection of the committee was made by CAA officials.

The committee will be called together soon for its first meeting and a general discussion of CAA plans for developing personal flying and non-scheduled flying. W. L. Jack Nelson is executive secretary of the committee, and terms of service of the members will be staggered to insure injection of new ideas into its activities.

Private Plane Is Job For Industry Alone, J. H. Geisse Declares

Development of a private flier's airplane vastly superior and less costly than any now known is the most important factor in proper advancement of personal flying, John H. Geisse, assistant to T. P. Wright, Civil Aeronautics Administrator, recently told managers of the seven continental regions of CAA.

Mr. Geisse outlined other factors in that advancement as "adequate development of airports and landing areas; rationalization of regulations; and the reinstatement of a civilian pilot training program."

May Reach Billion Mark—He declared the private flying industry could amount to \$1,000,000,000 a year with proper government and industry cooperation.

Discussing development of the private plane, Geisse emphasized the fact that "CAA has no intention of producing 'the airplane worthy of the market' and continued:

"Building better airplanes at lower costs is the responsibility of the industry and our only part in this activity should be that of encouraging and assisting the industry in this undertaking. This can be done by improvements in regulatory procedure, by providing to the industry all of the information we can from our records and experiences which would be helpful to it, and by underwriting some of the costs of experimental development.

Appropriations Needed—"We can move now toward decreasing regulations, and disseminating information. The matter of underwriting leads through the Budget Bureau and Congress. It requires appropriations which we do not have now. We believe that the expansion of private flying is of such vital interest to the nation as a whole that these appropriations should be made.

"The opportunity to establish private flying as an important industry will come immediately after the war," Geisse said, adding "If we do not establish private flying on a large scale in this period and it is followed by another period of unemployment we will have missed our great opportunity to serve our own and the public's interest.

"Neither Mr. Wright nor I have any idea that the prewar airplane was not a perfectly good airplane, or that the manufacturers were charging too much for it, or that there will not be a very considerable postwar market for which these airplanes will not be entirely suitable. What we do believe, and I am sure the industry shares this belief, is that the prewar airplane at prewar prices cannot attain anything approaching the mass market we envisage as potentially available.

New Types Necessary—"We also believe, and again I can say that there are at least some in the industry who have expressed a like belief, that it would be a disservice to private flying and to the industry generally to sell prewar airplanes or any other airplanes to customers for whom they are not suited. Such sales can only result in dissatisfied customers, and dissatis-

New Props and Appliances

The CAA has approved the following new types of propellers and added new models to previously type certificated propellers and appliances. The approval numbers and dates of approval are in parenthesis.

New Types

Propellers—

Aeroproducts, model A532F 3-blade propeller with A20-156-17 blades; steel hub and blades; 11 ft. 7 in. diameter; hydraulically controllable (feathering); 1200 hp., 1667 rpm. (Type Certificate No. 810, 1-26-45)

Flottorp, model 96; wood; 96 in. diameter; 64 in. to 60 in. pitch; 225 hp., 2175 rpm. (Type Certificate No. 809, 1-15-45)

New Models

Propellers—

Sensenich, model 43K10107; wood; 72 in. diameter; 42 in. pitch; 65 hp., 2350 rpm. (Type Certificate No. 691, 1-6-45)

Flottorp, model 76; wood; 76 in. diameter; 62 in. to 48 in. pitch; 130 hp., 2550 rpm. (Type Certificate No. 754, 1-31-45)

Flottorp, model 74; wood; 74 in. diameter; 62 in. to 48 in. pitch; 130 hp., 2550 rpm. (Type Certificate No. 754, 1-31-45)

Appliances—

Hayes, low pressure wheels models 840A, 841A and 842A; 8,000-4; approved static load per wheel 950 lbs. (Type Certificate No. 10, 7-31-44)

Hayes, low pressure wheels, model 1103A; 11,000-12; approved static load per wheel 5000 lbs. (Type Certificate No. 10, 1-24-45)

Answers

(Continued from page 26)

Q—What are the opportunities for a job in postwar aviation for me? I have had 200 hours of combat flying as a radio operator on a bomber, and will probably have at least 100 more. I am interested in ship-to-ground or ground-to-ship radio work with the airlines. P. E. C.

A—The CAA has received so many queries of this nature that it has prepared an estimate of the opportunities for employment in all branches of aviation. It is manifestly impossible to assist a man still in the service to obtain a civilian job in aviation without knowing the exact date of his discharge and precise description of his abilities. The best that can be done is to supply him with general information on which he can make general plans for his future.

Seek Lighter-Than-Air Certificates

Application has been filed by Cargo Airlines, Washington, D. C., with the Civil Aeronautics Board for a certificate to transport property and mail by rigid lighter-than-air ships from Lakehurst, N. J., to Buenos Aires, Argentina; Moskva, U.S.S.R.; and Capetown, U. of S. A.; and also from Sunnyvale, Calif., to Manila, P. I. and Sydney, Australia.

Weather Bulletin Issued

"Do You Study Weather Reports or Just Read Them?" is the title of a recent bulletin issued by the Civil Aeronautics Board's Safety Bureau. All pilots are urged to avail themselves of such aids as the hourly sequence reports, and warned to avoid low pressure areas, high winds, thunderstorms, showers and squalls.

fied customers are the bane of any industry. For those for whom the prewar airplane would not be satisfactory, new types must be developed and should be developed early enough so that customers will not be induced to buy equipment not suited to their needs."

Charter for Helicopter Taxi Service Is Sought

Application for a charter to establish air taxi service for Washington and vicinity has been made to the Civil Aeronautics Board.

If the service is authorized by the Board, persons and personal belongings will be transported by helicopter to and from points within 75 miles of Washington.

Accidents

(Continued from page 30)

Loses Propeller Blade—Loss of Propeller blade caused Robert Hershberger Studebaker of Dayton, Ohio, to make a forced landing near the Dayton Municipal Airport. He was not injured, but the aircraft was badly damaged.

Studebaker, 33, held a student pilot certificate and had accumulated 32 hours of solo flight time, all in the type of plane involved.

Investigation revealed the plane involved had been in a previous accident, necessitating repairs. Two new blades were put in the hub and the propeller installed. At that time it was given a 10-minute test and appeared to be functioning properly.

Glider Lands in Tree—A sailplane in a landing approach at Harris Hill Glider Field, Elmira, N. Y., landed in treetops seriously injuring the pilot, Lewis W. Hull, of Philadelphia, Pa., and badly damaging the glider.

Hull, 27, held both glider and power plane student certificates and had accumulated 45 hours of glider time, including 25 in the type involved, and 130 in power planes.

The sailplane was in good condition prior to the accident and Hull attributed the crash to his own error. The probable cause was delayed decision to land.

Instructor and Student Killed—Ernest Leon Clawson, instructor, and his student, John L. Stewart Jr., both of Huntington, W. Va., were fatally injured and the aircraft destroyed in an accident near Mayes Field, Chesapeake, Ohio.

Clawson, 32, held a commercial pilot certificate with single-engine land and flight instructor ratings. He has flown approximately 5100 hours, including 3000 in the type of plane involved. Stewart, 17, had received about 2 hours of dual instruction.

Gliding in a southwesterly direction in the vicinity of the airport the plane struck an electric power line. The craft fell to the ground in an inverted position and burst into flames.

The probable cause of the accident was carelessness of the instructor in not maintaining sufficient altitude to clear known obstructions in his flight path.

CAA Thanked for Assistances

The CAA Aircraft Engineering Division received a letter of thanks from the Regional Manager in Anchorage, Alaska, for prompt and efficient responses to queries on engineering problems in the new region.

Marshall C. Hoppin wrote "The prompt replies reflect credit on the CAA as a whole, and the interest in problems was gratifying."

Domestic Air Carrier Statistics

Operations for January 1945

Prepared from official reports, submitted by the air carriers listed, to the Civil Aeronautics Administration and the Civil Aeronautics Board

Operator and routes	Revenue miles flown	Revenue passengers carried ¹	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
All American Aviation, Inc., Pittsburgh-Huntington, Jamestown, Williamsport, Harrisburg, Washington..... Total	96,993	0	0	6,535	1,164,736	0
American Airlines, Inc. Total	3,404,520	81,116	52,090,735	2,337,923	1,041,148,692	60,141,074	86.61
Dallas-Los Angeles.....	1,183,404	22,120	19,412,646	267,663	234,590,872	21,523,167	90.19
New York-Chicago.....	300,671	17,431	6,732,584	838,672	358,465,501	7,750,102	86.77
Boston-New York.....	191,736	17,581	2,997,720	442,747	64,555,048	3,772,176	79.47
Syracuse-Cleveland.....	14,696	1,042	167,777	42,062	6,811,224	258,364	64.94
Cleveland-Nashville.....	84,001	5,008	1,249,410	113,895	30,162,088	1,573,432	79.41
New York-Fort Worth.....	940,746	25,127	14,027,209	385,546	220,992,405	16,319,659	85.95
Washington-Chicago.....	140,121	4,657	1,984,797	110,658	44,360,514	2,397,889	82.77
Chicago-Fort Worth.....	165,891	5,875	2,648,994	100,716	55,374,254	3,149,527	84.11
Buffalo-Toronto.....	3,665	591	44,916	1,694	128,592	71,212	70.09
El Paso or Fort Worth-Mexico City.....	179,589	3,169	2,824,682	34,270	25,708,194	3,316,546	85.17
Braniff Airways, Inc. Total	578,938	22,986	9,683,438	145,344	69,050,359	11,612,747	83.39
Chicago-Dallas.....	313,949	10,360	5,372,705	94,930	55,751,492	6,223,318	86.33
Denver-Brownsville.....	231,883	10,485	3,831,663	41,564	11,907,806	4,712,938	81.30
Houston-Nuevo Laredo.....	33,106	3,709	479,070	8,850	1,391,061	676,491	70.82
Chicago & Southern Air Lines, Inc. Total	329,347	10,570	4,878,404	187,606	64,948,992	6,814,713	71.59
Chicago-New Orleans.....	274,054	9,480	4,020,670	139,709	59,746,396	5,687,821	70.69
Memphis-Houston.....	55,293	2,415	857,734	17,897	5,202,596	1,126,892	70.11
Continental Air Lines, Inc. Total	262,037	6,663	2,689,905	34,813	16,110,168	3,408,900	78.91
Denver-El Paso-San Antonio.....	162,573	4,471	1,655,644	11,959	4,275,049	1,866,880	88.68
Denver-Tulsa.....	36,440	1,295	322,348	3,761	1,109,795	395,778	81.45
Denver-Kansas City.....	63,024	1,348	711,913	19,093	10,725,324	1,146,242	62.11
Delta Air Corporation. Total	374,513	15,892	6,622,379	115,627	45,122,561	7,697,701	86.03
Charleston or Savannah-Fort Worth.....	309,272	12,609	5,504,512	64,555	28,882,966	6,362,514	86.51
Atlanta-Cincinnati.....	65,241	3,439	1,117,867	51,072	16,239,595	1,335,187	83.72
Eastern Air Lines, Inc. Total	136,164	4,164	1,322,522	6,109	1,466,563	2,026,650	65.26
New York-San Antonio or Brownsville.....	101,782	3,738	1,150,899	6,017	1,435,534	1,724,254	66.75
New York-Miami.....	34,382	755	171,623	92	30,729	302,396	56.75
Chicago-Jacksonville.....							
Atlanta-Miami.....							
Washington-St. Louis.....							
Inland Air Lines, Inc. Total	101,782	3,738	1,150,899	6,017	1,435,534	1,724,254	66.75
Denver-Great Falls.....	34,382	755	171,623	92	30,729	302,396	56.75
Mid-Continent Airlines, Inc. Total	210,473	5,924	1,695,746	30,945	9,526,878	3,172,442	53.45
Minneapolis-Tulsa.....	140,511	4,269	1,227,147	24,874	7,468,381	1,908,721	64.29
Minneapolis-Des Moines, St. Louis or Kansas City.....	69,962	1,654	468,599	6,071	2,058,497	1,263,721	37.08
National Airlines, Inc. Total	397,313	10,717	4,691,932	39,042	16,102,729	5,260,068	89.20
New York-Key West via Miami.....	233,900	6,957	2,782,872	18,387	8,539,191	3,099,226	89.79
Jacksonville-New Orleans.....	163,513	5,146	1,909,060	20,655	7,563,538	2,160,842	88.35
Northeast Airlines, Inc. Total	99,542	4,626	1,004,372	18,133	3,254,483	2,185,098	45.96
Boston-Fresque Isle and Monton.....	75,578	3,666	804,035	15,481	2,983,951	1,664,301	48.31
Boston-Montreal.....	23,964	978	200,337	2,652	270,532	520,797	38.47
Northwest Airlines, Inc. Total	766,128	17,774	11,609,023	255,016	138,080,309	14,673,393	79.12
Chicago-Twin Cities-Seattle; Fargo-Winnipeg.....	760,656	17,774	11,609,023	254,860	138,058,039	14,673,393	79.12
Minneapolis-Duluth.....	5,472	0	0	156	22,464	0
Pennsylvania-Central Airlines Corporation. Total	565,885	35,009	7,471,134	533,457	103,627,254	11,339,978	65.88
Norfolk-Detroit.....	390,981	25,911	5,122,748	354,415	61,857,724	7,224,746	70.91
Detroit-Milwaukee or Chicago.....	124,109	8,889	1,561,243	136,399	25,508,836	2,560,785	60.97
Pittsburgh-Buffalo.....	18,607	1,067	130,578	8,133	1,769,997	322,500	40.48
Pittsburgh-Birmingham.....	62,188	2,093	655,565	34,510	14,490,697	1,321,887	53.30
Transcontinental & Western Air, Inc. Total	2,057,407	30,818	29,261,205	1,419,526	747,152,411	34,651,886	84.44
New York-Los Angeles.....	1,371,014	25,629	19,923,369	777,686	503,038,061	23,561,282	84.56
Dayton-Chicago.....	47,886	2,594	641,539	124,022	30,470,023	806,442	79.55
Winnipeg-San Francisco.....	141,558	5,324	2,136,371	41,722	18,366,115	2,491,399	85.75
Kansas City-Pittsburgh via Chicago.....	367,220	9,260	4,655,509	346,108	169,107,326	5,262,148	88.47
St. Louis-Detroit via Cincinnati and Dayton.....	55,509	3,274	788,038	95,035	16,342,525	1,087,360	72.47
Washington-Dayton via Columbus.....	74,153	3,263	1,116,379	34,953	9,828,361	1,443,255	77.35
United Air Lines, Inc. Total	2,734,504	52,335	36,162,387	955,296	637,117,467	39,078,671	92.54
New York-San Francisco.....	2,021,557	23,525	23,130,329	771,077	598,415,580	25,148,461	91.98
Salt Lake City-Seattle.....	144,365	4,134	2,510,189	44,374	27,295,900	2,953,842	84.98
San Diego-Salt Lake City.....	504,625	22,121	9,459,585	126,236	57,409,357	9,779,263	96.73
Seattle-Vancouver.....	11,631	1,376	182,088	4,820	553,123	236,533	76.98
Washington-Toledo.....	52,326	1,179	880,196	8,789	3,443,507	960,572	91.63
Western Air Lines, Inc. Total	384,187	13,987	6,290,366	110,990	51,346,780	7,568,887	82.13
San Diego-Salt Lake City.....	202,733	6,527	3,496,245	82,577	42,355,692	4,056,624	86.19
Salt Lake City-Great Falls.....	54,994	1,845	688,751	3,153	829,499	1,132,339	60.83
Great Falls-Lethbridge.....	10,230	602	85,135	1,043	169,979	204,363	41.66
Los Angeles-San Francisco.....	116,230	5,579	2,020,235	24,217	7,991,610	2,265,561	89.17
Total.....	105,178	4,207	1,347,910	16,779	5,296,646	2,208,240	61.04
Colonial Airlines, Inc., New York-Montreal. Total	86,250	10,786	1,534,915	568,451	87,862,808	1,621,176	94.68
Hawaiian Airlines, Ltd., Honolulu-Hilo and Port Allen. Total	86,250	10,786	1,534,915	568,451	87,862,808	1,621,176	94.68
Grand Total.....	86,250	10,786	1,534,915	568,451	87,862,808	1,621,176	94.68

¹ The total passengers carried for each airline is an unduplicated figure with the exception of United whose unduplicated figure was not available.

MARCH 15, 1945



Airline Orders Service

No. 3350 orders Eastern Air Lines to show cause why Board's tentative order fixing rate of compensation for transportation of mail should not be made final. (Dec. 22.)

No. 3351 orders American Airlines to show cause why Board's order fixing rate of compensation for transportation of mail should not be made final. (Dec. 22.)

No. 3352 orders United Air Lines to show cause why Board's order fixing rate of compensation for transportation of mail should not be made final. (Dec. 22.)

No. 3353 orders Transcontinental & Western to show why Board's order fixing rate of compensation for transportation of mail should not be made final. (Dec. 22.)

No. 3398 orders termination of temporary certificate of Chicago and Southern Air Lines authorizing service to Little Rock, Ark. (Jan. 11.)

No. 3400 authorizes Mid-Continent Airlines to establish service between Pueblo, Colo., and Tulsa, Okla. (Jan. 13.)

No. 3412 dismisses application of Cloud Airlines for certificate proposing service in northwest United States, Dockets, 1263, 1264 and 1617. (Jan. 24.)

No. 3415 authorizes Pennsylvania Central Airlines to establish service between Detroit, Mich., and Chicago, Ill., as national defense no longer requires delay. (Jan. 24.)

No. 3417 directs extension of temporary permit of Royal Dutch Air Lines to provide service from Miami, Fla., to Central America, the Canal Zone, north coast of South America and islands of the Caribbean Sea for three months from Jan. 31, 1945. (Jan. 25.)

No. 3418 directs extension of temporary permit of Expreso Aero Inter-Americano, S. A. to serve points in Central and northern South America and the islands of the Caribbean Sea for three months from Jan. 31, 1945. (Jan. 25.)

No. 3419 orders consolidation of applications of Van Meter, Streeter & Co. and North Central Airways and dismissal of application of Van Meter, Streeter & Co. (Jan. 26.)

No. 3420 rescinds order authorizing temporary suspension of service at New Haven, Bridgeport, Conn. and Springfield, Mass. on Route No. 18. (Jan. 26.)

No. 3421 denies application of Transcontinental & Western Air to establish non-stop service between St. Louis, Mo. and Detroit, Mich. on Route No. 58 on the grounds the service would be a departure from the shortest course between the two cities. (Jan. 26.)

No. 3422 approves application Gustav Metzner and Railway Express Agency for interlocking relationships. (Jan. 29.)

No. 3423 approves interlocking relationships between C. McD. Davis and the Railway Express Agency. (Jan. 29.)

No. 3424 grants American Export Airlines, operating between New York City and Foynes, Eire (Ireland) permission to use the Baltimore airport while the one in New York is ice-sealed. (Jan. 29.)

No. 3425 grants the Cities of Shreveport, La., and Marshall, Tex. permission to intervene in the application of Wichita Falls Transport Co. for a certificate. (Jan. 29.)

No. 3426 denies request of the City of Little Rock, Ark. to intervene in the application of the Wichita Falls Airtransport Co. for a certificate. (Jan. 29.)

No. 3427 denies petition of Braniff Airways to consolidate its application with the Texas-Oklahoma proceedings. (Jan. 29.)

No. 3432 grants immediate operation of non-stop service between Butte and Great Falls, Mont. on Route No. 19 by Western Air Lines. (Jan. 30.)

No. 3433 grants immediate operation of non-stop service between Bridgeport, Conn. and Boston, Mass. by American Airlines. (Jan. 30.)

No. 3434 dismisses application of Grays Harbor Lines for certificate. (Jan. 30.)

No. 3435 grants severance to American President Lines from the application of Northwest Airlines for certificate. (Jan. 30.)

No. 3438 orders dismissal of application of Wichita Falls Transport Co. application for a charter in what is known as the Oklahoma Case. (Feb. 2.)

No. 3439 orders dismissal of application of Duncan Air Transport for certificate. (Feb. 2.)

No. 3440 authorizes subject to Presidential approval extension for 90 days of temporary foreign carrier permit to the Aero-Transportes, S. A., to use the airports at Brownsville and Eagle Pass, Tex. to engage in transports of persons, property and foreign mail between Monterrey, Mex. and Brownsville and Eagle Pass by way of intermediate points, Monclova and Nueva Rocita, Mex. (Feb. 2.)

No. 3441 authorizes extension, subject to Presidential approval, of the temporary foreign carrier permit for 90 days of Lineas Aeras Mexicanas, S. A. to use the airport at Nogales, Ariz., in operations on its route between Chihuahua, Cananea and Nogales, Sonora, Mexico and Nogales, Ariz. (Feb. 2.)

No. 3442 grants temporary exemption to Pan American Airways from landing or taking off from either New York City or Baltimore in flights to and from Foynes, Eire and Bermuda and permits use of the Petuxent River at Cedar Point. Severe ice conditions in New York harbor and at Baltimore made the exemption necessary. (Feb. 2.)

No. 3448 grants permission to Continental Airlines to intervene in the application of Braniff Airways for modification of its certificate. (Feb. 6.)

No. 3449 permits American Airlines to establish non-stop service between Akron and Dayton, Ohio on Route No. 22. (Feb. 6.)

No. 3450 permits Continental Air Lines to establish non-stop service between El Paso and Midland, Tex. and between Midland and South Angelo, Tex. on Route on 29. (Feb. 6.)

No. 3451 grants temporary exemption to American Export Airlines so as to permit the use of Charleston, S. C. as a terminal point in lieu of New York City and Baltimore so long as ice conditions in those ports prevent safe operations. (Feb. 7.)

No. 3453 dismisses applications of Gateway Transfer Co. for certificate as contained in Dockets 1254 and 1618 in what is known as the North Central Case. (Feb. 7.)

No. 3453 approves interlocking relationships between Robert V. Fleming and Pennsylvania-Central Airlines. (Feb. 7.)

No. 3455 grants temporary exemption to Pan American Airways so as to permit the use of Miami, Fla. as a terminal point in lieu of New York City and Baltimore so long as ice conditions in those ports prevent safe operations. (Feb. 8.)

No. 3462 grants petition of American Export Airlines to intervene in the application of North-east Airlines for certificate. (Feb. 9.)

No. 3463 grants permission to Central Air Lines to temporarily discontinue service at Garden City, Can. Municipal Airport as facilities there are inadequate for handling operation of DC-3 equipment. (Feb. 9.)

No. 3464 denies petition of Chicago Black Hills and Western Air Lines to consolidate its application for certificate with that of Automatic Airmail in what is known as the North Central Case. (Feb. 6.)

No. 3465 amends order so as to permit American Airlines to make one flight in and out of the Philadelphia Municipal Airport to pick up one passenger, mail and cargo stranded at the Airport because of an emergency landing of another plane. (Feb. 12.)

No. 3466 permits immediate operation of non-stop service by Pennsylvania-Central Airlines between Detroit, Mich., and Akron, Ohio, on Route No. 14. (Feb. 13.)

No. 3467 permits immediate operation of non-stop service by the Pennsylvania-Central Airlines between Muskegon and Lansing, Mich., and between Flint and Muskegon on Route No. 32. (Feb. 13.)

No. 3472 reopens proceedings on petition of Braniff Airways for rehearing on application of Essair for certificate, the Board having been reversed by U. S. District Court of Appeals for the District of Columbia. (Feb. 13.)

No. 3473 grants permission to Cordova Air Service, Alaska Coastal Airlines and Ellis Transport to intervene in the application of Northwest Airlines for certificate in what is known as the Pacific Case. (Feb. 13.)

No. 3480 permits Mandel Brothers to withdraw its application for certificate in the North Central Case. (Feb. 14.)

No. 3486 orders Caribbean Atlantic Airlines to show cause why rates for transportation tentatively fixed by the Board should not be made final. (Feb. 7.)

No. 3488 grants Department of the Interior and Territory of Alaska permission to intervene in the application of Northwest Airlines for certificate in the Pacific Case. (Feb. 19.)

No. 3489 dismisses application of Prairie Airways in the Pacific Case. (Feb. 19.)

No. 3490 dismisses application of Olson Steam-

ship & Navigation Corporation in the Pacific Case. (Feb. 19.)

Miscellaneous

No. 3376 orders investigation to determine whether rates and fares established by All American Aviation, American Airlines, Braniff Airways, Chicago and Southern Air Lines, Colonial Airlines, Continental Air Lines, Delta Air Corporation, Eastern Air Lines, Hawaiian Airlines, Inland Air Lines, Mid-Continent Airlines, National Air Lines, Northeast Airlines, Northwest Airlines, Pennsylvania-Central Airlines Corporation, Transcontinental & Western Air, United Air Lines, Western Air Lines, and Railway Express Agency, are unjust or unreasonable. (Dec. 22.)

No. 3413 denies application of United Air Lines and Transcontinental & Western Air for rehearing on applications for certificates and amendments to existing certificates. (Jan. 23.)

No. 3414 denies application of Braniff Airways, Southern Air Lines and Transcontinental & Western Air for rehearing on applications for certificates and amendments of existing certificates. (Jan. 24.)

No. 3436 denies petition of American Airlines for vacation of modification of Board's Show Cause order in contemplated passenger fare reduction. (Jan. 31.)

No. 3443 grants temporary exemption to Pan American Airways permitting it to use Norfolk, Va. and a temporary terminal point for flights scheduled to leave New York City for Bermuda. (Feb. 3.)

No. 3457 orders investigation of all unauthorized air transport activities for hire wholly within the territory of Alaska. In this connection the CAB's Alaska office is directed to maintain a list of all parties desiring to participate in the investigation. (Feb. 8.)

No. 3487 vacates order directing A. Garni, Eastern Air Lines and Pan-American-Grace Airways to show cause why approval of interlocking relationships should not be revoked. Action taken because of Garni's resignation as member of Eastern Air Lines board of directors. (Feb. 12.)

No. 3496 grants permission to the Cities of Cincinnati, Ohio and Detroit, Mich., and the Sioux City, Iowa, Chamber of Commerce to intervene in the application of Automatic Air Mail application for a certificate. (Feb. 20.)

No. 3497 denies application of Eastern Air Lines to include its application for certificate in the Florida Case. (Feb. 21.)

Airman Orders

Suspensions

No. 3399 suspends mechanic certificate of Neil Nelson Miles for 30 days for failure to exercise proper care in supervising repairs. Requested and was given hearing by Board. (Jan. 12.)

No. 3410 suspends student pilot certificate of Frank Paul Bascone for 90 days. Flew at altitude of less than 1,000 feet in the vicinity of Kansas City, Mo. (Jan. 23.)

No. 3411 suspends commercial pilot certificate of Clifford C. Bonifield for 90 days. Took off from Illinois Airport, Urbana, Ill., with two passengers when engine was not functioning properly. (Jan. 23.)

No. 3428 suspends commercial pilot certificate of William Burton McKinley for 6 months. Flew at altitude of less than 1,000 feet over Americus, Ga. (Jan. 30.)

No. 3437 suspends student pilot certificate of Raymond L. Schillig for 90 days. Permitted another student pilot to fly plane with himself (Schillig) as passenger for Horton to Mankato, Kan. (Feb. 2.)

No. 3445 suspends commercial pilot certificate of Matvin Hall Smith for 60 days. Flew at less than 500 feet at Globe, Ariz. (Feb. 6.)

No. 3446 suspends student pilot certificate of Robert Marshall Reams for 60 days. Flew at altitude of less than 500 feet in the vicinity of Anex, N. C. (Feb. 6.)

No. 3454 suspends commercial pilot certificate of Harold William Emick for 30 days for flying over a lake in the vicinity of Lone Star, Kan., about 500 feet above the surface of the water. (Feb. 6.)

No. 3456 orders suspension of flight instructor ratings of Newton H. Reid, doing business as Reid School of Aeronautics, for 6 months for causing false entries of flight instruction time to be made for certain Army cadets being trained at the school. It is charged in the complaint that "In May or June 1943, Respondent directed certain instructors in his employ to enter flying time in the flight records of cadets which time was not actually given." At the hearing five flight instructors, formerly in Reid's employ, testified in support of the complaint. (Feb. 6.)

No. 3458 suspends student pilot certificate of William H. Patch for 30 days for flying too low, less than 500 feet, near Minier, Ill. (Feb. 9.)

AIR REGULATIONS . . . As of March 1, 1945

No. 3459 suspends commercial pilot certificate of Roy Washington Milligan for 6 months for flying too low, less than 500 feet, in the vicinity of Baker and Miles City, Mont. (Feb. 9.)

No. 3460 suspends student pilot certificate of Donald Jasper Goode for 90 days for flying too low near Dallas, Tex., performing acrobatics without parachute in the vicinity of Vickery, Tex., and performing acrobatics in the vicinity of Dallas at an altitude of less than 1500 feet. (Feb. 9.)

No. 3468 suspends student pilot certificate of Harvey Lee Hurley for 6 months for flying too low in the vicinity of Corpus Christi, Tex. (Feb. 13.)

No. 3469 suspends student pilot certificate of Arthur Lee Perry for 6 months for flying a plane without having been endorsed by his instructor as competent. (Feb. 13.)

No. 3470 suspends student pilot certificate of George Robert Fry for 60 days for flying too low in the vicinity of McCordsville, Ind. (Feb. 13.)

No. 3479 suspends commercial pilot certificate of James Ownes Brooks for 30 days for abetting an assault on Arthur William Powell. (Feb. 9.)

No. 3481 suspends student pilot certificate of Donald C. Andrews for 60 days for flying too low in the vicinity of Billings, N. Y. (Feb. 16.)

No. 3482 suspends student pilot certificate of Hugh Dual Gibson for six months for flying too low in the vicinity of Mission, Kan. (Feb. 16.)

No. 3483 suspends commercial pilot certificate with flight instructor rating of Tom Mitchell for 6 months for landing on undesignated areas and flying too low. (Feb. 16.)

No. 3484 suspends commercial pilot certificate of Irvin William Weiler for 20 days following hearing on charges of failure to carry airworthiness certificate and keep aircraft log current. (Feb. 16.)

No. 3485 suspends student pilot certificate of Frank Mason Williamson for 60 days for flying without airworthiness certificate; operating outside the radius of his instructor's operating base; for carrying a passenger and operating plane with dual controls fully functioning with passenger in second control seat. (Feb. 16.)

No. 3497 suspends student pilot certificate of Robert James Little for 60 days for flying too low in the vicinity of Binghamton, N. Y. (Feb. 20.)

No. 3494 suspends student pilot certificate of Ralph Christensen for 90 days for carrying passenger other than certified instructor; flying with dual controls in operation and landing in undesignated area. (Feb. 20.)

No. 3495 suspends mechanic certificate of Ernest E. Baldwin for 60 days for certifying aircraft in airworthy condition when it was not. (Feb. 20.)

No. 3503 suspends mechanic certificate of Marshall Wilford Garrett for 90 days upon proof at hearing he certified an aircraft as airworthy when such was not the case. (Feb. 23.)

Revocations

No. 3416 revokes student pilot certificate of Maurice John Devoe for flying at less than 500 feet above Gardner Airport, Gardner, Mass.; assaulting Arthur William Powell at the Bolton Airport, Bolton, Mass., for reporting him, and carrying passengers who were not certified instructors. The Board suspended Devoe's certificate for 6 months for offenses committed about a year before those on which revocations was based. (Jan. 23.)

No. 3429 revokes student pilot certificate of Ralph Struckman for flying at altitude of less than 500 feet in vicinity of Reno, Nev., and executing acrobatic maneuvers. (Jan. 30.)

No. 3430 revokes commercial pilot certificate of Harold Edward Mast for flying too low and performing acrobatics near Lubbock, Tex. (Jan. 30.)

No. 3431 revokes student pilot certificate of Ervin Aaron for carrying passenger not a certified instructor during flight in vicinity of Greenville, S. C. (Jan. 30.)

No. 3461 revokes student pilot certificate of Luke Zepherin for violations of Civil Air Regulations at the Callendar Airport, New Orleans, La. (Feb. 9.)

No. 3471 revokes private pilot certificate of Gene Earle Baker for flying too low in vicinity of Superior, Wis., while carrying a passenger. (Feb. 13.)

No. 3474 revokes student pilot certificate of Edward Douglas McCreary for flying too close to another plane in traffic control area in the vicinity of the Salt Lake City Airport; flying too low over Cottonwood and Jordan, Utah. (Feb. 14.)

No. 3475 revokes student pilot certificate of Kimball B. Anderson for flying too close to another plane in an air traffic control area in the vicinity of the Salt Lake City Airport and flying too low over Cottonwood and Jordan, Utah. (Feb. 14.)

No. 3476 revokes private pilot certificate of Lowrey Wallace Anderson for performing acrobatics at less than 1500 feet near Abilene, Tex., and failure to provide himself with a parachute. (Feb. 14.)

No. 3477 revokes student pilot certificate of Cecil Raymond Lancaster for flying a passenger not a certified instructor from Meacham Field to

TITLE	PART No.	PRICE		DATE LATEST EDITION		No. AMENDMENTS ISSUED	
		Part	Manual	Part	Manual	Part	Manual
Aircraft							
Airworthiness Certificates.....	01	\$0.05	None	10/15/42	None	1	
Type and Production Certificates.....	02	.05	None	3/1/41	None		
Airplane Airworthiness.....	04	.15	(1)	11/1/43	2/1/41	2	5
Engine Airworthiness.....	13	.05	None	8/1/41	None		
Propeller Airworthiness.....	14	.05	(1)	7/15/42	12/1/38		
Equipment Airworthiness.....	15	Free	\$0.10	4/15/44	7/1/38		
Radio Equipment Airworthiness.....	16	0.05	Free	2/13/41	2/13/41		1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments.....	18	.05	0.50	9/1/42	6/1/43		
Airmen							
Pilot certificates.....	20	.10	None	2/15/44	None	6	
Airline Pilot Rating.....	21	.05	None	10/1/42	None	3	
Lighter-than-air Pilot Certificates.....	22	.05	None	10/15/42	None		
Mechanic Certificates.....	24	.05	None	7/1/43	None		
Parachute Technician Certificates.....	25	.05	None	12/15/43	None		
Traffic Control Tower Operator Certificates.....	26	.05	None	2/1/44	None		
Aircraft Dispatcher Certificates.....	27	.05	None	10/1/43	None		
Physical Standards for Airmen.....	29	.05	None	6/1/42	None	2	
Air Carriers							
Air Carrier Operating Certification.....	40	.10	None	10/10/44	None		
Air Agencies							
Flying School Rating.....	50	.05	Free	11/1/40	12/40	3	2
Ground Instructor Rating.....	51	.05	None	12/15/43	None		
Repair Station Rating.....	52	.05	Free	10/1/42	2/41		
Mechanic School Rating.....	53	.05	(1)	8/1/42	5/40		
Parachute Loft Certificates and Ratings.....	54	.05	None	1/21/43	None		
Air Navigation							
Air Traffic Rules.....	60	.10	0.15	8/15/44	8/1/43	3	
Scheduled Air Carrier Rules.....	61	.10	None	2/1/44	None	2	
Foreign Air Carrier Regulations.....	66	.05	None	3/1/42	None		
Miscellaneous							
Definitions.....	98	.05	None	10/15/42	None		
Regulations of the Administrator							
Aircraft Registration Certificates.....	501	Free	None	3/31/43	None		
Recordation of Aircraft Ownership.....	503	Free	None	3/31/43	None		
Seizure of Aircraft.....	531	Free	None	12/8/41	None		
Regulations Governing the Distribution and Use of Aviation Gasoline.....	534	Free	None	9/16/44	None		

¹Out of stock. ²Special regulation No. 223.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances must be by cash or by money order, payable to the Superintendent.

the Mid-West Airport, Fort Worth, Tex. (Feb. 14.)

No. 3478 revokes parachute technician certificate of Stacha Lucile Burton for deviating from the manufacturer's approved procedure in packing Awitlik DS parachutes. (Feb. 14.)

No. 3491 revokes student pilot certificate of Glenn Maurice Matson for flying too low in the vicinity of Lake Preston, S. D.; going outside the area of the operating base of his instructor; solo flying without endorsement of instructor; carrying passenger and landing in undesignated area. (Feb. 20.)

No. 3492 revokes student pilot certificate of Robert Huie Starr for carrying passenger. (Feb. 20.)

No. 3504 revokes student pilot certificate of Frederick Neville Walsh for piloting airplane and carrying passenger when not certified to do so and cranking an engine without having a competent operator at engine controls. (Feb. 23.)

No. 3505 revokes student pilot certificate of Ernest Ralph Lingley Jr. for taking off from undesignated area; flying too low and carrying passenger. (Feb. 23.)

No. 3506 revokes mechanic certificate of Charles Toth for returning airplane on which repairs had been made without obtaining approval of CAA and for certifying airplane as airworthy when such was not the fact. (Feb. 23.)

No. 3507 revokes private pilot certificate of Loren D. Johnson for taking off in plane carrying 85 pounds in excess of allowable load which crashed, killing one and injuring other occupants of plane. (Feb. 23.)

Miscellaneous

No. 3383 amends Order 3224 in the matter of Wallace Marburger, holder of student pilot certificate and provides for suspension for 6 months from Nov. 6, 1944. (Jan. 12.)

No. 3444 dismisses complaint against Jacqueline Coleman, holder of student pilot certificate, for carrying passenger not a certified instructor. (Feb. 2.)

No. 3447 permits issuance of airman certificate to Alex Papania by waiving citizenship provisions of section 20.142 Civil Air Regulations. (Feb. 6.)

No. 3499 denies request of Newton H. Reid for stay of effectiveness of Board's Order 3456. Respondent may renew request Board directs. (Feb. 21.)

No. 3500 orders complaint against Alfred Jackson, formerly Alfred Joseph Janick, holder of private pilot certificate be dismissed, following hearing before the board. (Feb. 20.)

No. 3501 suspends A & E mechanic certificate of Roy A. Crain for 30 days for making improper installations on aircraft engine which resulted in powerplant failure. (Feb. 20.)

No. 3508 orders reopening of charges against Steve Hawkins, holder of private pilot certificate, for hearing before Board. (Feb. 23.)

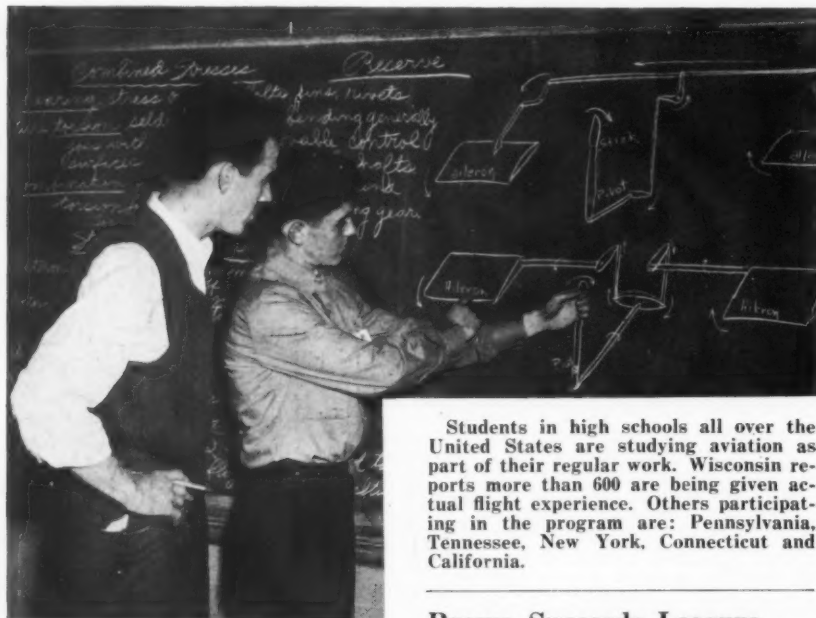
Regulations

Reg. 330.....Effective Jan. 30, 1945

Any first pilot listed in the Pennsylvania-Central Airlines Corporation air carrier operating certificate on January 1, 1945, as qualified to operate aircraft in scheduled air transportation between Detroit, Michigan, and Chicago, Illinois, via Grand Rapids, Michigan, over Green civil airway No. 2 and Red civil airway No. 28 will be deemed competent to pilot aircraft in scheduled nonstop air transportation between Detroit, Michigan, and Chicago, Illinois, over Red civil airway No. 12. Reg. 331.....Effective Feb. 2, 1945

Red position lights emitting an alternate aviation red and aviation white flash not complying (See Regulations, next page)

The High Sky Their Textbook



Students in high schools all over the United States are studying aviation as part of their regular work. Wisconsin reports more than 600 are being given actual flight experience. Others participating in the program are: Pennsylvania, Tennessee, New York, Connecticut and California.

Schools

(Continued from page 27)

dents enrolled in aeronautics courses during 1944. The California bulletin is significant for its proposals on a junior college aviation program.

Conferences Scheduled—Four state departments of education have scheduled conferences to review progress in the field and plan next steps. Meetings have been held at Providence, R. I., and Columbus, Ohio. Others scheduled are Nashville, Tenn., March 22-24; and Montgomery, Ala., April 5-7. In addition, an exploratory conference was held by the State Aeronautics Commission of Massachusetts in Boston. The Civil Aeronautics Administration is represented at these gatherings by Dr. Edgar Fuller, of its Aviation Education Service.

"There is a growing realization," Dr. Fuller says, "that aviation in the schools is not just a war emergency measure, but is here to stay. Forward-looking educators are aware that we are entering an air age in which every student will need to know the basic principles of aeronautics and their broad social implications. Such an understanding will be necessary whether or not the student ever becomes a civil or military flier, and should be inculcated as part of the general education program."

Regulations

(Continued from preceding page)

with \$15,015 of the Civil Air Regulations may be used on air carrier airplanes operated in scheduled air transportation when such use has been approved by the Administrator. This regulation shall terminate July 31, 1945.

Reg. 332.....Effective Feb. 13, 1945

The Superior Oil Company of California is authorized to operate one Lockheed airplane Model 18 at a provisional weight of 18,500 pounds subject to the operating limitations specified in §04.71 of the Civil Air Regulations until otherwise ordered by the Board.

Brown Succeeds Leasure As CAB Chief Examiner

The resignation of C. Edward Leasure, chief examiner of the Civil Aeronautics Board, is announced by the Board. He will enter private law practice in Washington. Francis W. Brown, assistant chief examiner, becomes chief examiner.

Leasure has been with the Board since the Civil Aeronautics Act went into effect in 1938. The Board regrets his resignation, which was accepted with reluctance.

Brown has been one of the Board's principal examiners since the creation of the Board and previously he was examiner for the Interstate Commerce Commission's Bureau of Air Mail, the functions of which were transferred to the Board by the Civil Aeronautics Act of 1938.

National Airport Plan on Sale

Printed copies of the Civil Aeronautics Administration's National Airport Plan Report are now available to the public from the office of the Superintendent of Public Documents, Government Printing Office, Washington, 25, D. C., at 20 cents a copy. The report contains: Recommendations, Need for More Airports; Deficiencies in the Present System; What Is Required; Estimates of Cost; Clearing and Protecting Airport Approaches; and Airports as Federal Public works. In addition, the appendix contains considerable data on previous surveys and statistics, including many tables showing proposed locations, costs and other german matter.



Traffic

(Continued from page 28)

there are still CAA men scattered about the world. There are 150 aircraft communicators and air traffic controllers outside the U. S., in the British West Indies, Brazil and other South American countries and in North Africa doing for the military fliers what they learned to do at U. S. stations. CAA's Airports Service, its work largely done, has one engineer abroad supervising construction of another airport in the British Isles as an additional terminal for our stream of planes to Europe. Air traffic controllers and aircraft communicators numbering 30 are at work in North Africa, and along the Northeast airway to England.

The Army and Navy have leaned heavily and gratefully upon the skill and experience of these civilian employees, as is the custom in a non-military country like this. The equipment and the men were products of American enterprise and competition. Army and Navy requests for the services of these technicians has been met in every case.

CAA engineers served as surveyors of sites, to be followed by crews who supervised installation of the equipment, tuned it and "put it on the air." In the construction they worked with many peoples of the world, Eskimos, Liberians, Arabs, Dominicans, Brazilians, Hindus, and the black men of Africa, to whom most of the equipment was mysterious and the motives of the CAA men unintelligible. But the dah-dit and the dit-dah of the ranges was music to the ears of pilots carrying supplies or ferrying fighter planes along these airways.

Army Air Forces Communications Service cooperated in some of the installation and took over operation of most of them when they had been readied for service.

Over the Top—One of the more interesting airway jobs performed by the CAA was the northeast airway up through Canada, across Greenland to Iceland and into Scotland. This airway, laid out in 1942, was a winter surveying and construction job, performed under great difficulties as to labor and supply. It was a vital necessity to the war effort at a time when the Nazi submarine "wolf pack" was almost in complete command of the North Atlantic and when the Allied ground stations were precariously held. This airway, touched the Pas and Churchill, Man.; Southampton Island; Fro-bisher Bay; Baffin Island, Juliannehaab, Kangamiut and Angmassalik, Greenland; Presque Isle, Me.; Argentina, Newfoundland; Goose Bay, Labrador; Gander, Newfoundland; Reykjavik, Iceland; Bealek, Ireland; and Stornaway, Scotland.

A similarly important airway was laid out across the South Atlantic, and some of the shells by which General Montgomery stopped the Germans at El Alamein were flown over this route with American range stations below guiding the planes.

In the Aleutians and several of the Southwest Pacific Islands, CAA men moved in close behind the troops. The transports that supplied the still-fighting Marines on Guadalcanal came in on CAA ranges.

The Seabees, the Signal Corps, GI's of service battalions, the AACs and natives did the actual work of constructing these airway facilities. CAA technical men provided the know-how. Thus civilians help win our wars, and it is the policy and intention of the CAA to continue to lend every aid to the military services toward the winning of the war, the first consideration of every one.

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